

PATENT COOPERATION TREATY

AUG 10 2004

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
APPLICATION AS PUBLISHED OR REPUBLISHED

To:

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ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)
05 August 2004 (05.08.2004)

Applicant's or agent's file reference
TITN20595PCT

IMPORTANT NOTICE

International application No.
PCT/US2004/000489

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09 January 2004 (09.01.2004)

Priority date (day/month/year)
14 January 2003 (14.01.2003)

Applicant

TITAN TOOL, INC. et al

The International Bureau transmits herewith the following documents:

- ☒ copy of the international application as published by the International Bureau on 05 August 2004 (05.08.2004) under No. WO 2004/065018
- ☐ copy of international application as republished by the International Bureau on under No. WO
- For an explanation as to the reason for this republication of the international application, reference is made to INID codes (15), (48) or (88) (as the case may be) on the front page of the attached document.

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PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

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FIRST NOTICE INFORMING THE APPLICANT OF
THE COMMUNICATION OF THE INTERNATIONAL
APPLICATION (TO DESIGNATED OFFICES WHICH
DO NOT APPLY THE 30 MONTH TIME LIMIT
UNDER ARTICLE 22(1))

(PCT Rule 47.1(c))

To:

AUG 31 2004

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575 Madison Avenue
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Date of mailing (day/month/year) 19 August 2004 (19.08.2004)		
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Priority date (day/month/year) 14 January 2003 (14.01.2003)		
Applicant TITAN TOOL, INC. et al		

- ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), **does apply**, please see Form PCT/IB/308(Second and Supplementary Notice) (to be issued promptly after the expiration of 28 months from the priority date).
- Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, **does not apply**, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:
05 August 2004 (05.08.2004)

CH

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

- The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, **does not apply**, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1:

FI, LU, SE, TZ, UG, ZM

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

4. TIME LIMITS for entry into the national phase

For the designated Office(s) listed above, and unless a demand for international preliminary examination has been filed before the expiration of **19 months** from the priority date (see Article 39(1)), the applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **20 MONTHS** from the priority date.

In practice, time limits other than the 20-month time limit will continue to apply, for various periods of time, in respect of certain of the designated Offices listed above. For **regular updates on the applicable time limits** (20 or 21 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

It is the applicant's **sole responsibility** to monitor all these time limits.

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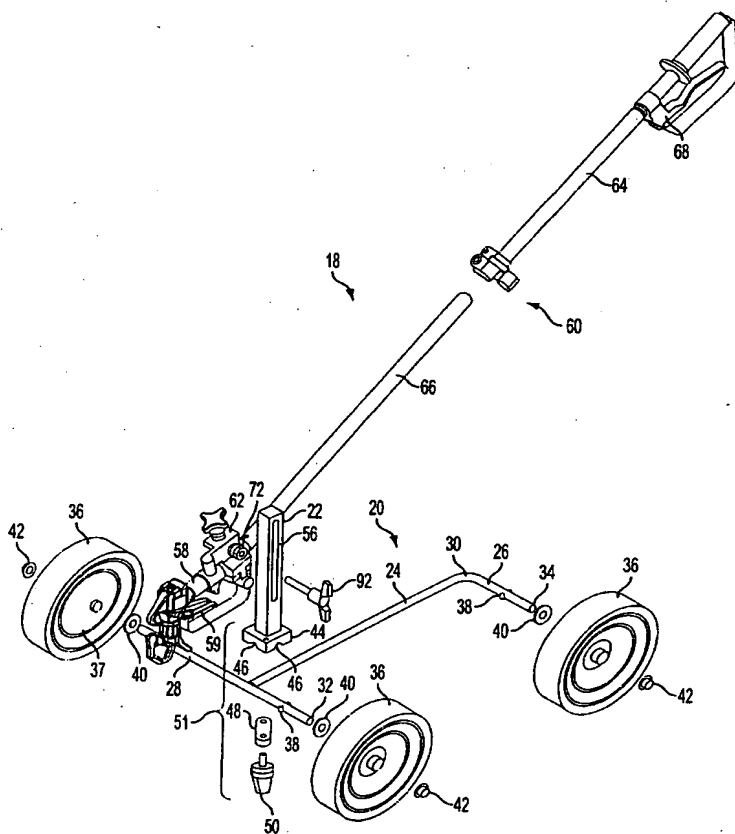
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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(54) Title: **ACCESSORY CART FOR STRIPING PAVEMENT AND OTHER SURFACES**



(57) Abstract: An accessory cart having a J-shaped frame for removable mounting of a spray gun to convert a conventional airless paint sprayer into a line striper to paint lines on parking lots, curbs, warehouse floors and other pavement surfaces, and which can alternately be used in conjunction with a traditional line striper in cramped spaces or between parked cars, and which is easily converted from a 3-wheeled device to a 2-wheeled device for painting curved lines, and which permits adjustable positioning of the spray gun at a desired location on the cart to optimize the spray pattern in a particular application.

WO 2004/065018 A2

ACCESSORY CART FOR STRIPING PAVEMENT AND OTHER SURFACES**CROSS REFERENCE TO RELATED APPLICATIONS**

This application claims the benefit of U.S. Provisional Application 60/439,934
5 filed on January 14, 2003.

FIELD OF THE INVENTION

The present invention relates generally to the field of painting apparatus. More particularly, this invention relates to accessory devices for conventional paint sprayers
10 in the form of an easily transportable cart on which a paint spray gun may be mounted for converting a conventional airless paint sprayer into a line striper to paint lines on parking lots, curbs, warehouse floors, and other pavement surfaces.

BACKGROUND OF THE INVENTION

15 Devices exist for painting lines on pavement surfaces in parking lots and other locations where the line is sprayed onto the pavement by a paint spray gun. Conventional line stripers are not without their limitations, however, especially with respect to their reduced maneuverability in tight spaces, such as between vehicles that are parked in a parking lot. In particular, conventional line stripers are too big and too
20 awkward to be able to spray lines between parked cars, for example. Another drawback with conventional line stripers is their inappropriateness to be used indoors to stripe warehouse floors, for example, due to the fact that a line striper is typically powered by a gasoline engine.

Furthermore, not everyone can afford a line striper, especially when the need for
25 one might only be an occasional event hardly worth the cost of owning one. And there are those occasions when the striping job is too small to justify the effort necessary to bring a conventional line striper to the job site.

In view of the prior art the need exists for a lightweight cart onto which a spray
30 gun may be quickly and easily mounted for surface line marking.

SUMMARY OF THE INVENTION

The present invention is a line striper cart having a J-shaped frame member formed of a longitudinal section and first and second transverse sections, with a plurality of wheels mounted on the frame member. The line striper cart of the present

an arrangement suitable for painting a curb.

Figure 6 is a view in perspective of the present invention showing an arrangement suitable for painting curves and circles.

Figure 7 is an elevation view of the present invention shown in Figure 6.

5 Figure 8 is a view in perspective of the present invention.

Figure 9 is a first side elevation view of a support post useful in the practice of the present invention.

Figure 10 is a second side elevation view of the support post of Figure 9.

10 Figure 11 is a plan view of the support post taken in the direction of arrows 11-11 of Figure 9.

Figure 12 is a partially exploded view in perspective of a spray gun holder useful in the practice of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

15 The following detailed description is of the best mode or modes of the invention presently contemplated. Such description is not intended to be understood in a limiting sense, but to be an example of the invention presented solely for illustration thereof, and by reference to which in connection with the following description and the accompanying drawings one skilled in the art may be advised of the advantages and
20 construction of the invention. In the various views of the drawings, like reference characters designate like or similar parts.

Referring to the figures, the present invention is directed to a cart 18 including a rigid skeletal frame member 20 providing a track-like surface on which support post 22 may be attached. The frame member 20 comprises a longitudinal section 24, a first
25 transverse section 26 and a second transverse section 28 together providing a structure having a shape as the letter J.

Preferably, frame member 20 is formed of one half-inch cold rolled steel rod, however, any material of sufficient strength and rigidity may be used in this invention. The stock may be formed in a conventional manner by any of various methods. The
30 stock may also take the shape of different forms, besides round cross-section, and may be solid or tubular provided the selection allows for variable positioning of the support post 22 along the frame member 20. A frame formed of round stock, either rod or tubing, is preferred because it then also may serve as an axle for each wheel. Other shapes of stock material will require additional, more costly, manufacturing steps to

of attachment of longitudinal section 24 and the transverse section 28, in which case it is preferable to include an appropriately sized hole 45 (Figure 11) in the underside surface of base 44 at the intersection of grooves 46 to provide clearance for a weld bead which may project from the frame at the junction of sections 24 and 28.

5 There is a slot 56 in support post 22 to which a conventional airless spray gun 58 may be attached to the frame member 20 with means for adjusting the distance desired between the spray gun 58 and the surface to be painted. A spray gun extender 60 may be used to mount the spray gun 58 to the support post 22. The spray gun extender 60 includes a remote trigger that attaches to the spray gun trigger and a handle for moving
10 the cart by hand. Spray gun extender 60 is similar to an Outrigger gun pole, Product No. 757-920, available from Titan Tool, Inc., Oakland, New Jersey. Spray gun extender 60 generally differs from the Outrigger gun pole in that extender 60 utilizes a shorter two-piece pole and a different fastener adapted for mounting the extender to support post 22. Spray gun extender 60 typically includes a spray gun holder 62, top and
15 bottom pole sections 64 and 66, a control lever 68, and a control cable 70. An adjustable joint 72 having mating grooved faces 77 (see Figure 12) on the spray gun holder 62 allows a wide range of pivotable adjustments of spray gun 58 about a horizontal axis. Control cable 70 runs from the control lever 68 along or inside the pole sections 64 and 66 to a lever 74 pivotably mounted on the holder 62 for operating the
20 spray gun 58. When the spray gun 58 is mounted in the spray gun holder 62, spray gun trigger 59 engages lever 74. When the control lever 68 is pulled, control cable 70 transfers that movement to lever 74, which in turn pulls the spray gun trigger 59 to begin spraying. Upon release of control lever 68, a return spring 76 allows the paint valve in the spray gun 58 to close, by releasing the trigger 59 of the spray gun 58. A
25 fastener 78 attaches the end of the control cable 70 to the gun mount lever 74.

 With reference to Figure 12, spray gun holder 62 includes a main body 80, a clamping block 82, a clamping knob 84, a gun support bracket 86 and a cable adjuster 88. Initial setup includes placing the spray gun 58 into the gun support bracket 86 so that the spray gun trigger 59 rests on a bushing 90. Knob 84 is then tightened until it
30 comes to rest firmly against a handle of the spray gun 58. The gun holder 62 is then attached to the support post 22 with a winged knob 92 (see Figure 8). The spray gun position is adjustable by loosening knob 92 and rotating the adjustable joint 72 or moving the gun and gun holder in slot 56 of the support post 22 to the desired position.

It is to be understood that in the practice of the present invention, a pump (also

22 has been repositioned for this orientation.

Although not shown in the drawings, it will be readily understood that owing to its lightweight construction, the cart can be easily lifted over a line once painted and placed in position to paint another line without the need to back it off the line, or run
5 over the recently painted line with one of the wheels. The handle on pole 64 can also be used to rotate the cart onto the two in-line wheels, thus allowing the cart to be wheeled away from the recently painted line until the free wheel clears it and then the cart may be placed back on the ground.

When it is desired to use the spray gun 58 for other purposes, it can be
10 disengaged from the gun holder 62 for hand spraying.

While the present invention has been described at some length and with some particularity with respect to the several described embodiments, it is not intended that it should be limited to any such particulars or embodiments or any particular embodiment, but it is to be construed with references to the appended claims so as to provide the
15 broadest possible interpretation of such claims in view of the prior art and, therefore, to effectively encompass the intended scope of the invention. Furthermore, the foregoing describes the invention in terms of embodiments foreseen by the inventor for which an enabling description was available, notwithstanding that insubstantial modifications of the invention, not presently foreseen, may nonetheless represent equivalents thereto.

comprises a handle.

8. The line striper cart of claim 1, wherein the plurality of wheels includes a pair of laterally spaced wheels at one end of said frame member and a single wheel at the other end of said frame member for three-wheeled operation of the cart, and wherein said J-shaped frame member is adjustable such that said single wheel is positionable off the ground relative to the pair of laterally spaced wheels for two-wheeled operation of the cart.

9. The line striper cart of claim 8, wherein the transition from three-wheeled operation to two-wheeled operation is effected through a re-positioning of the attachment means.

10. The line striper cart of claim 8, wherein the attachment means is positioned on a transverse section intermediate said pair of laterally spaced wheels during two-wheeled operation of the cart.

11. The line striper cart of claim 1, wherein the attachment means is adjustably positionable on and self-centering relative to the frame member via a clamp member having intersecting v-shaped recesses.

12. The line striper cart of claim 1, wherein the attachment means further comprises a support post having an elongated slot extending along the longitudinal axis of the support post for adjustable attachment of a spray gun to the cart.

13. The line striper cart of claim 12, further comprising a spray gun holder attached to the support post via the elongated slot, said spray gun holder being slidably and angularly repositionable within said elongated slot.

14. The line striper cart of claim 1, wherein said moving means further comprises a length-adjustable pole having a control means for operating a spray gun attached to the cart.

15. The line striper cart of claim 14, wherein said pole further comprises a

wheel at the other end of said frame member for three-wheeled operation of the line striping apparatus, and wherein said frame member is adjustable such that said single wheel is positionable off the ground relative to the pair of laterally spaced wheels for two-wheeled operation of the line striping apparatus.

22. The line striping apparatus of claim 21, wherein the transition from three-wheeled operation to two-wheeled operation is effected through a re-positioning of the mounting means.

23. The line striping apparatus of claim 21, wherein the mounting means is positioned on a transverse section intermediate said pair of laterally spaced wheels during two-wheeled operation of the line striping apparatus.

24. The line striping apparatus of claim 17, wherein the mounting means is adjustably positionable on and self-centering relative to the frame member via a clamp member having intersecting v-shaped recesses.

25. The line striping apparatus of claim 17, wherein the mounting means further comprises a support post having an elongated slot extending along the longitudinal axis of the support post for adjustable attachment of a spray gun to the line striping apparatus.

26. The line striping apparatus of claim 17, further comprising a spray gun holder attached to the support post via the elongated slot, said spray gun holder being slidably and angularly repositionable within said elongated slot.

27. The line striping apparatus of claim 17, wherein said moving means further comprises a length-adjustable pole having a control means for operating a spray gun attached to the line striping apparatus.

28. The line striping apparatus of claim 27, wherein said pole further comprises a handle and said control means further comprises a control lever incorporated into said handle.

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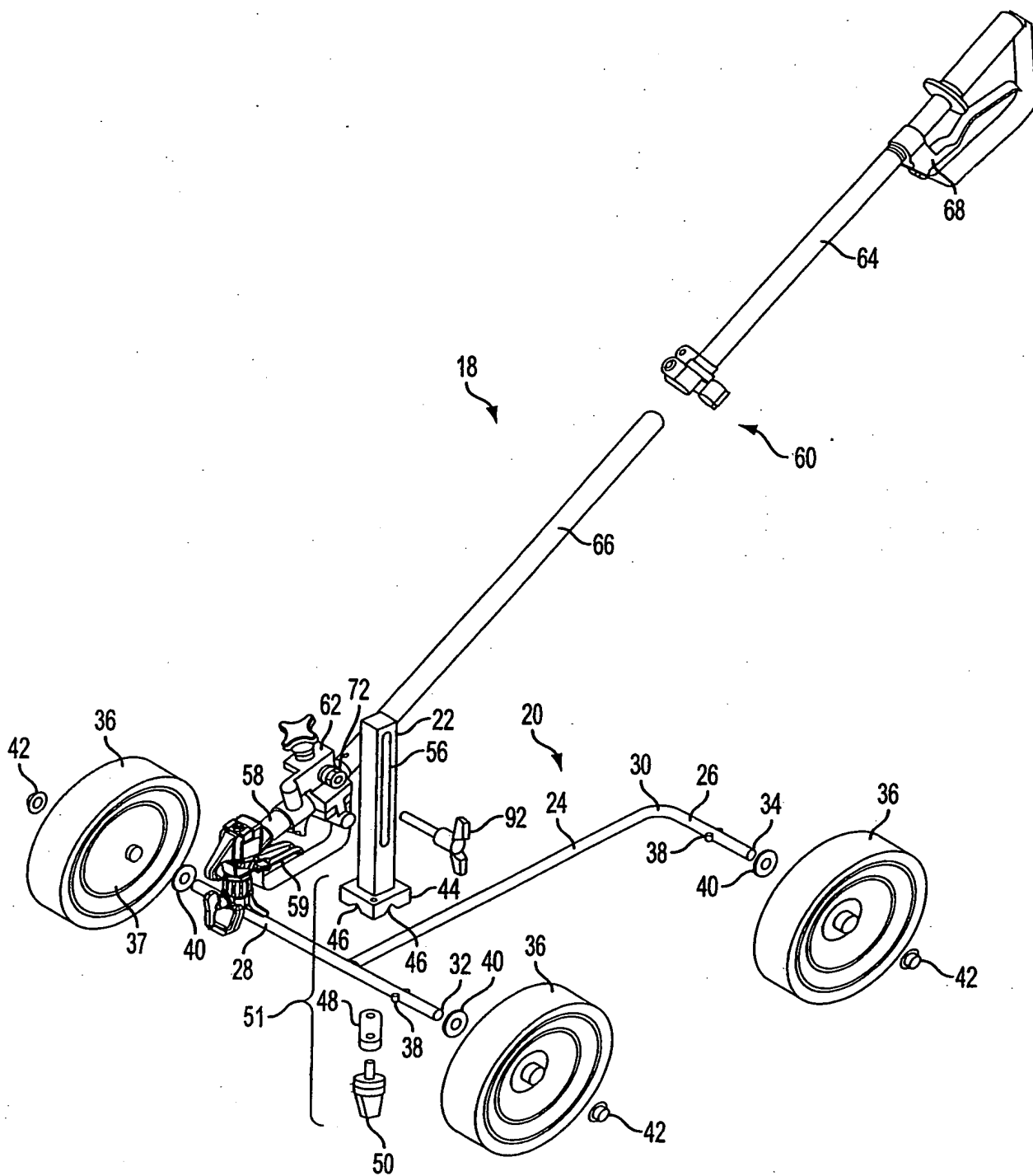
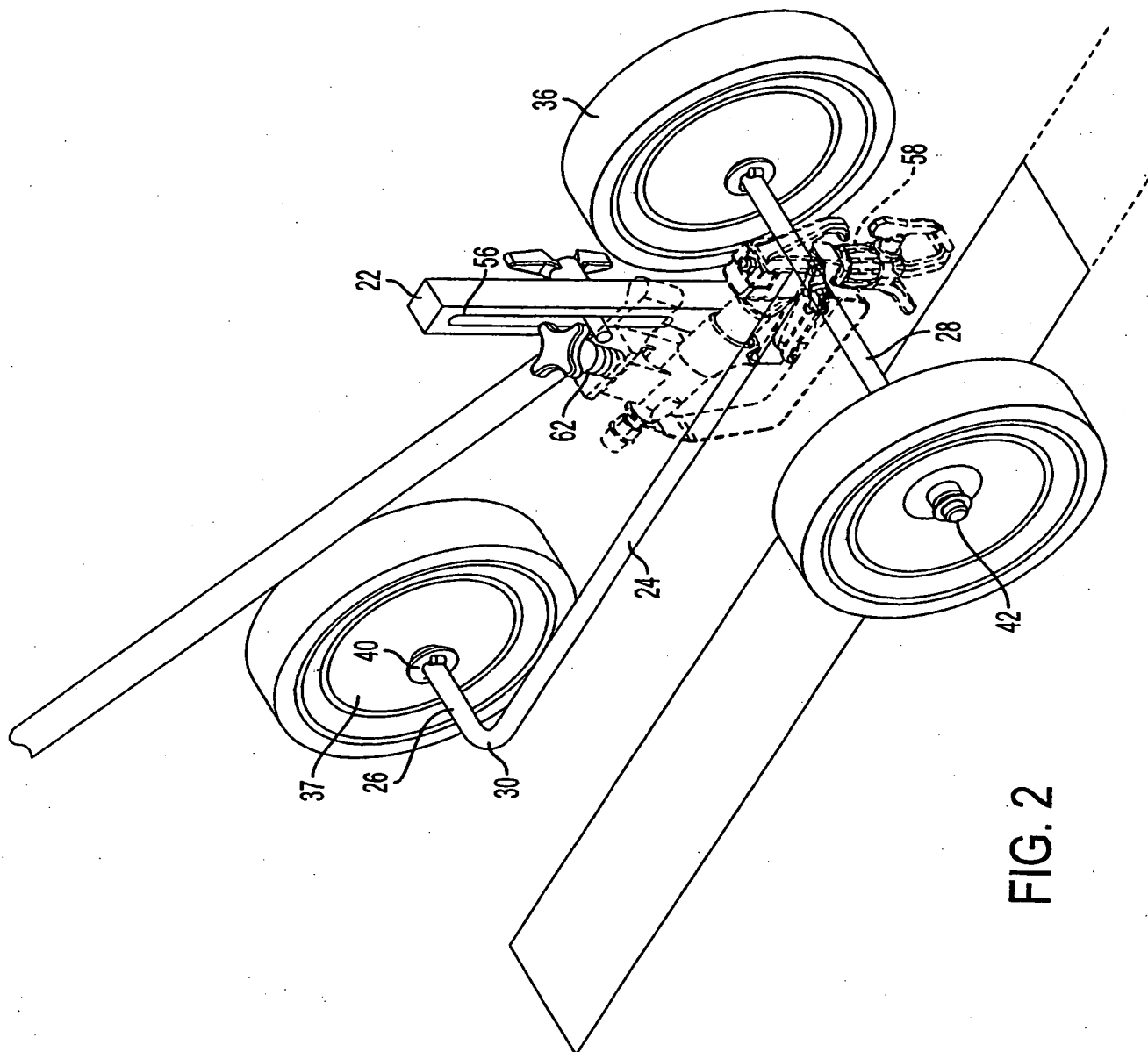


FIG. 1



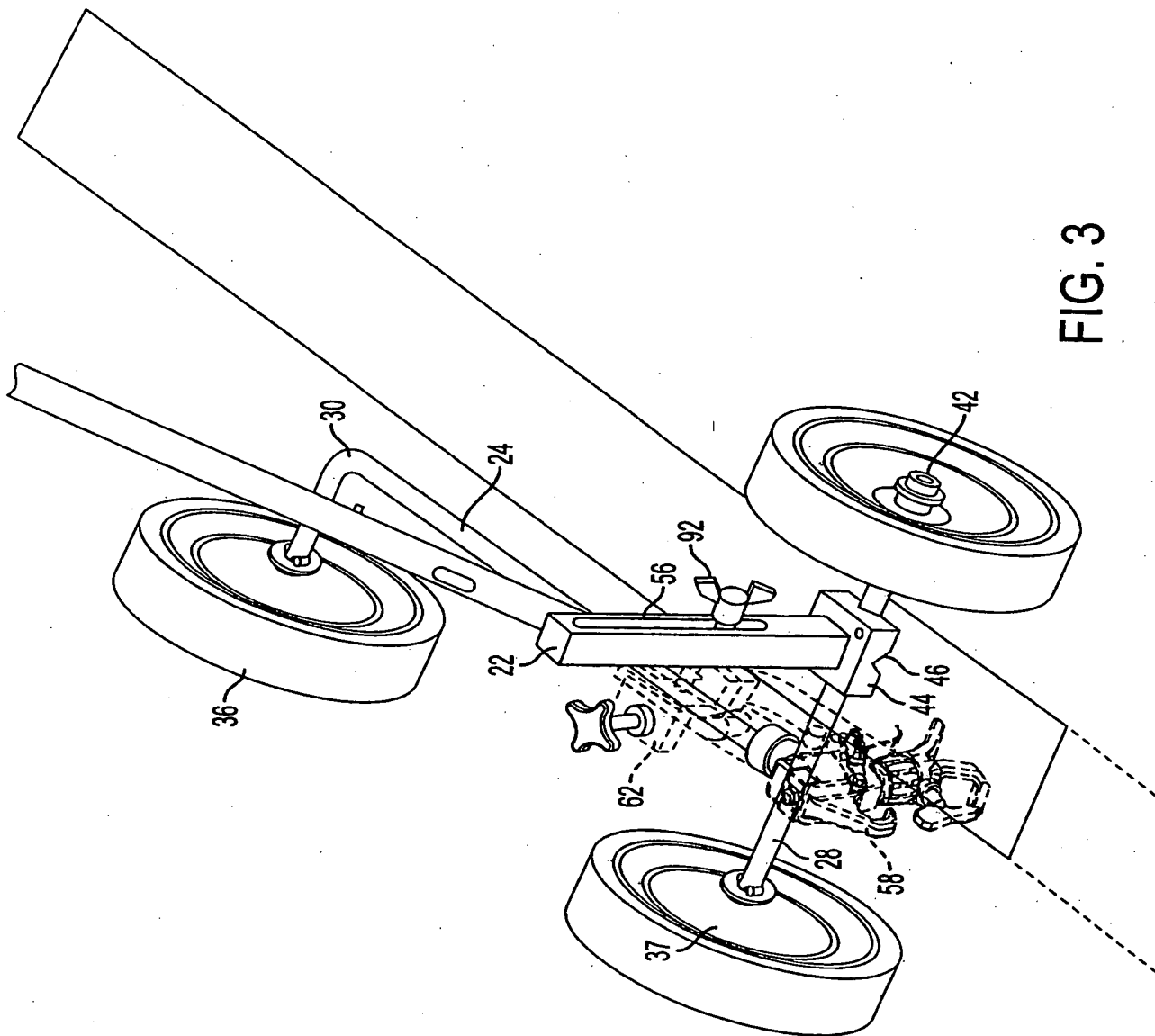


FIG. 3

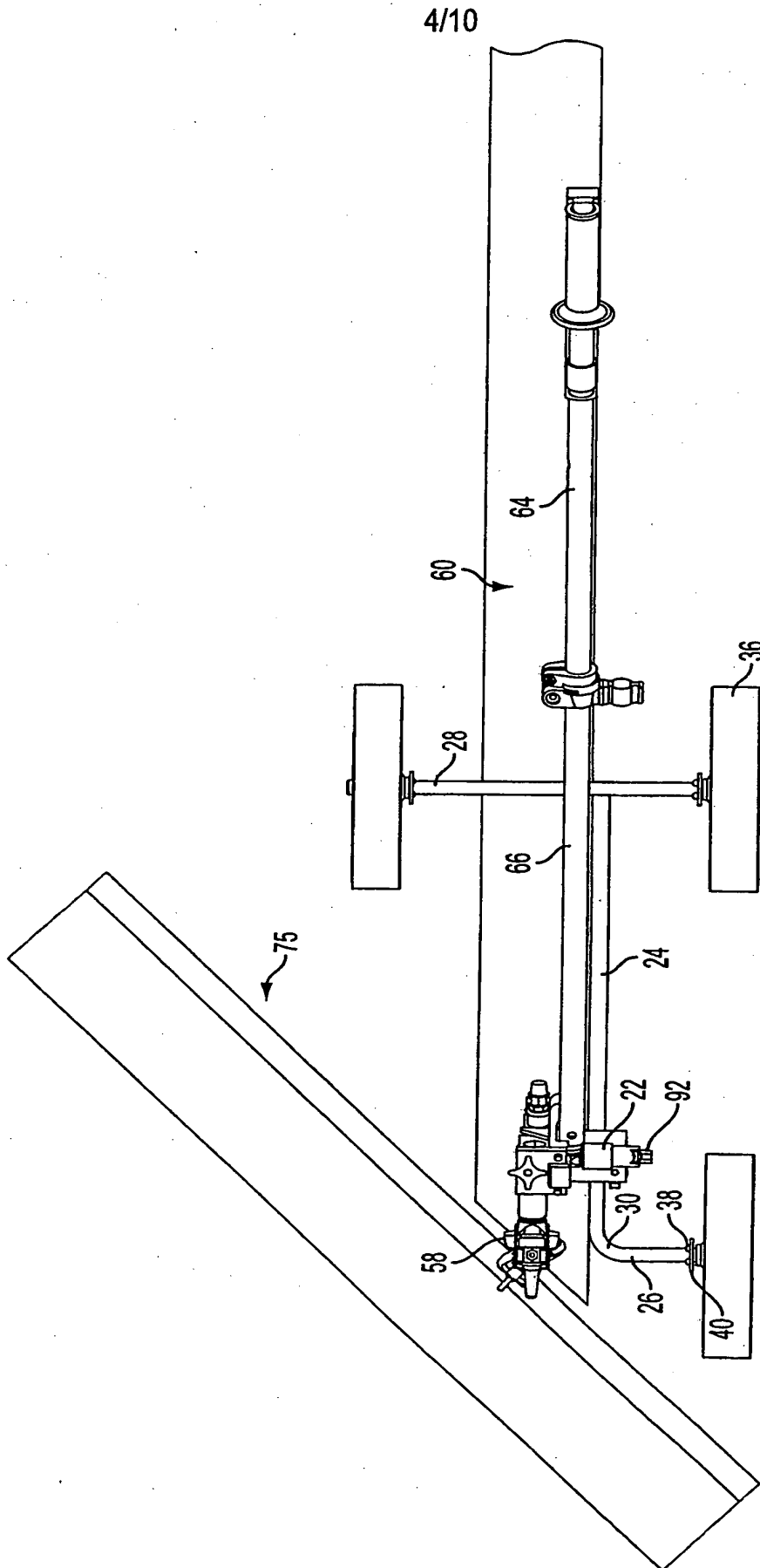


FIG. 4

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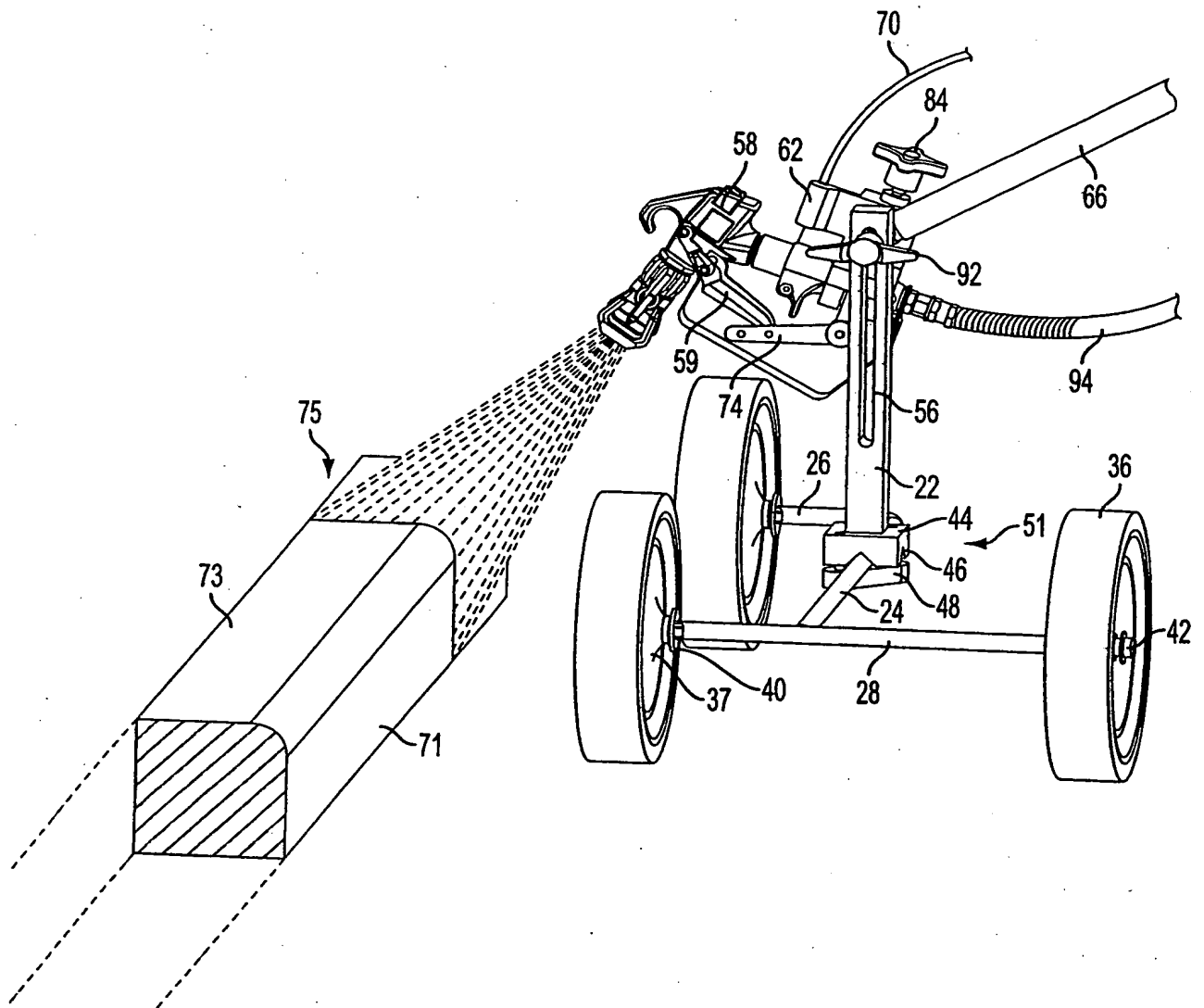


FIG. 5

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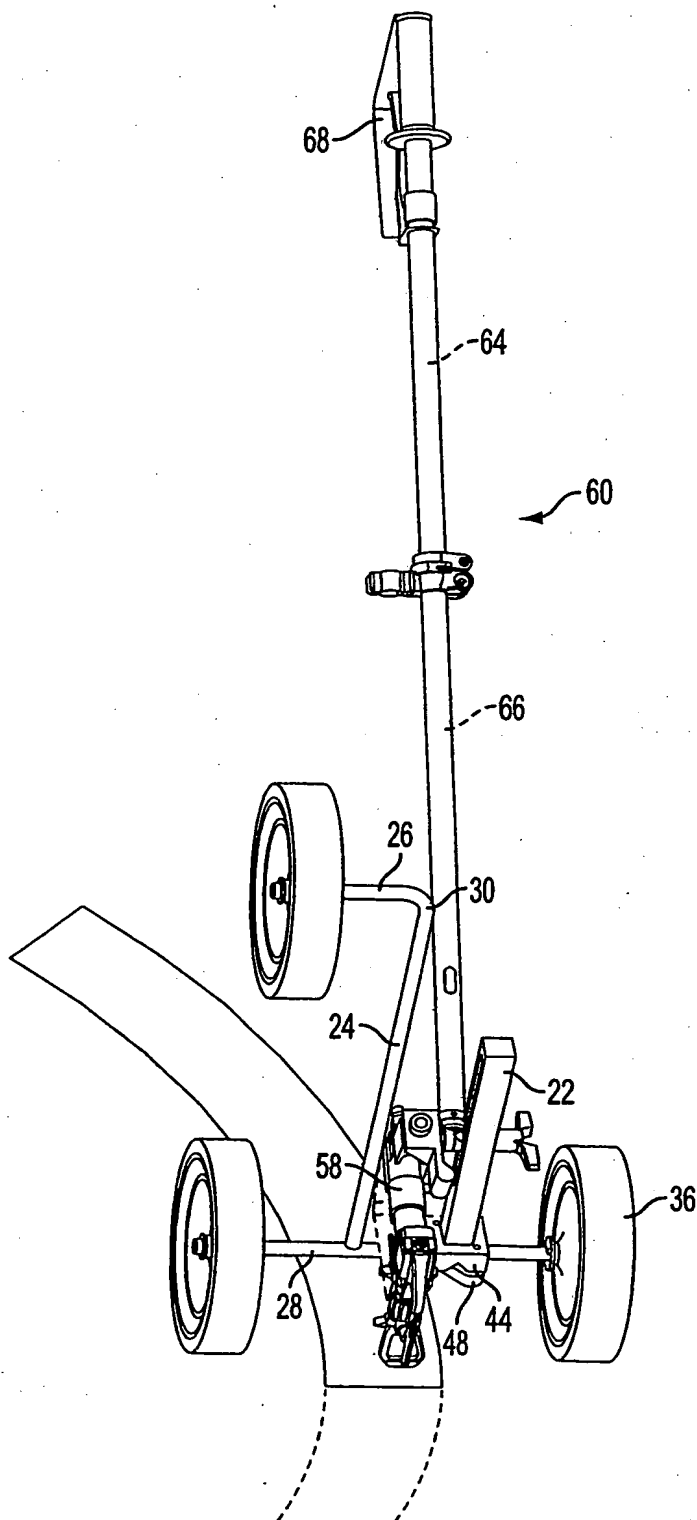


FIG. 6

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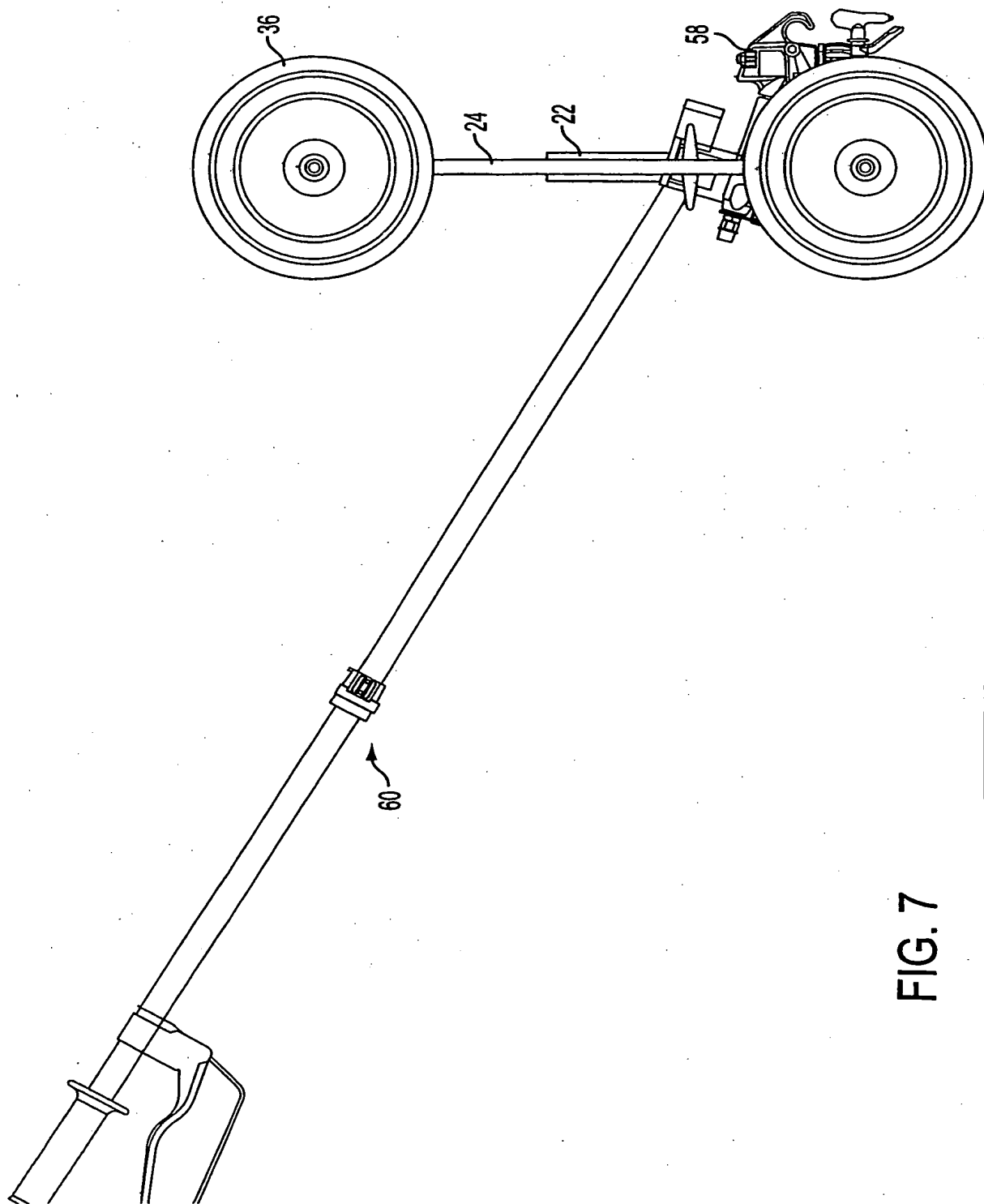


FIG. 7

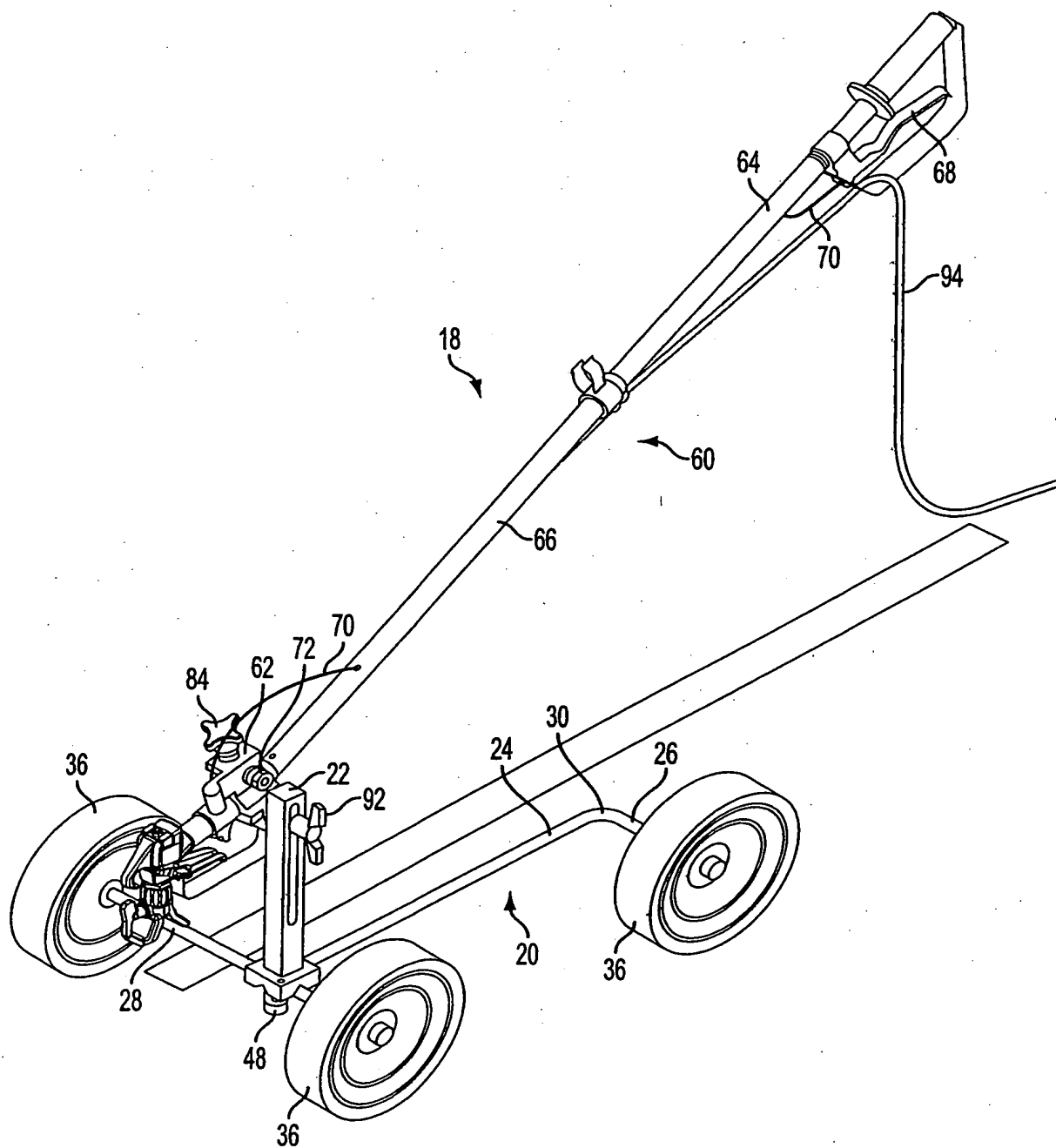


FIG. 8

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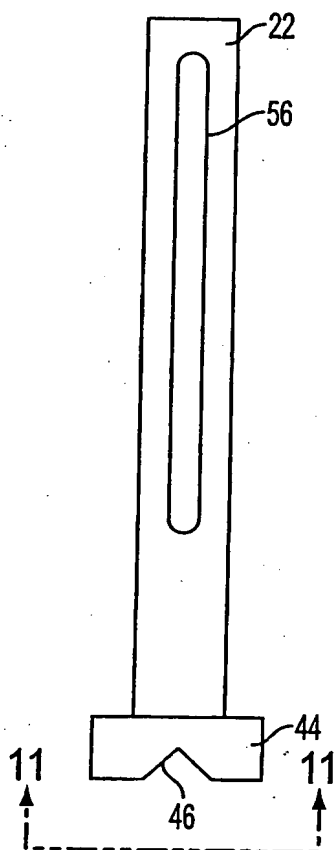


FIG. 9

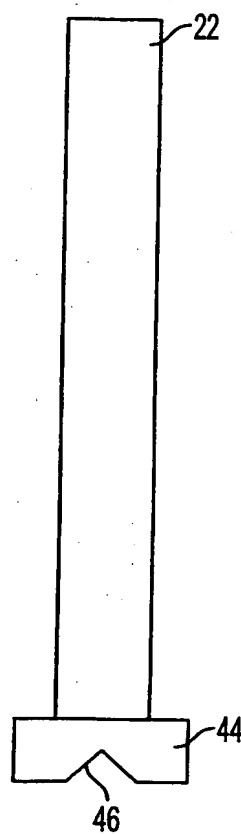


FIG. 10

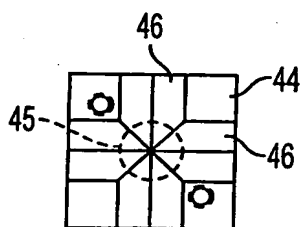


FIG. 11

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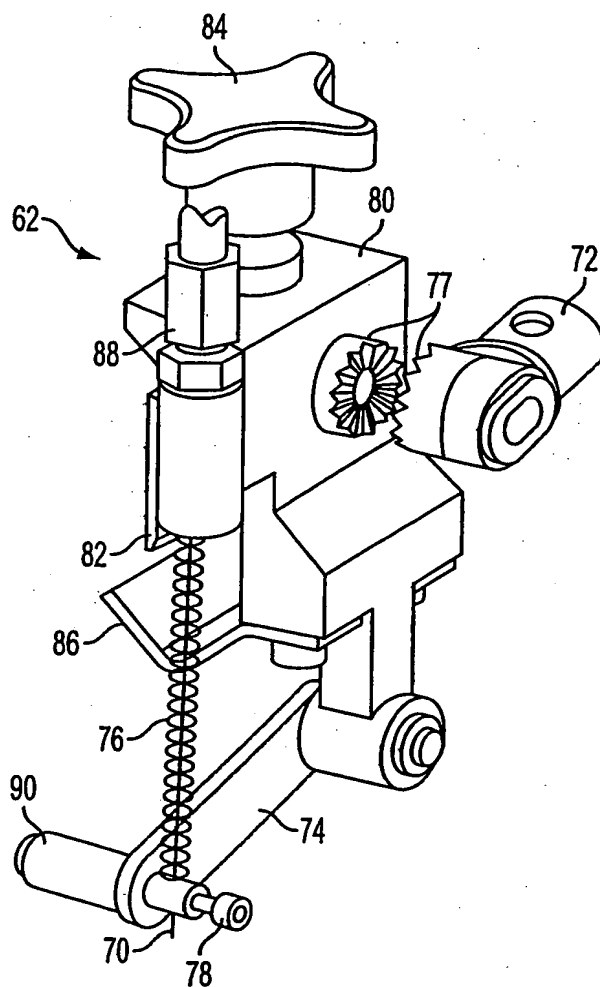


FIG. 12